

A.L. THOMPSON



Heathkit
**SPECIFICATIONS
and SCHEMATICS**



HEATH COMPANY . . . BENTON HARBOR, MICH.

HEATHKIT SPECIFICATIONS AND SCHEMATICS is intended to provide reference information and to answer your questions pertinent to Heathkit design.

The Heath Company has always freely offered schematics and technical information in the sincere belief that the material is interesting and will prove helpful to many.

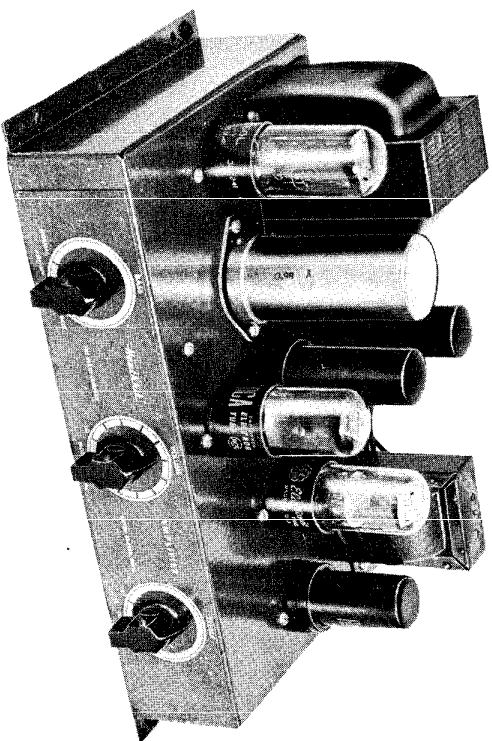
Heathkit pioneering in the electronic instrument kit field has resulted in the availability of a wide selection of useful well-designed, low cost electronic kit form equipment. Heathkits fulfill a major need in electronics and have been directly responsible for further stimulating interest particularly among electronics enthusiasts whose activity might be discouraged because of high equipment cost.

The combination of careful engineering, complete and detailed instruction manuals, use of highest quality components and exacting machine work in forming and punching of panels and chassis all combine to produce accurate, dependable test equipment which is a pleasure to construct and truly professional in appearance.

The advantages of constructing kit form test equipment are numerous. The builder saves the major portion of the cost of factory built equipment and becomes better acquainted with the circuitry and operation of the unit thereby gaining that important knowledge that will help him use the instrument far more intelligently over a wider range of applications. Should maintenance or repair ever be needed, the knowledge gained in construction will permit the kit builder to easily put the unit back into proper operating condition without delay.

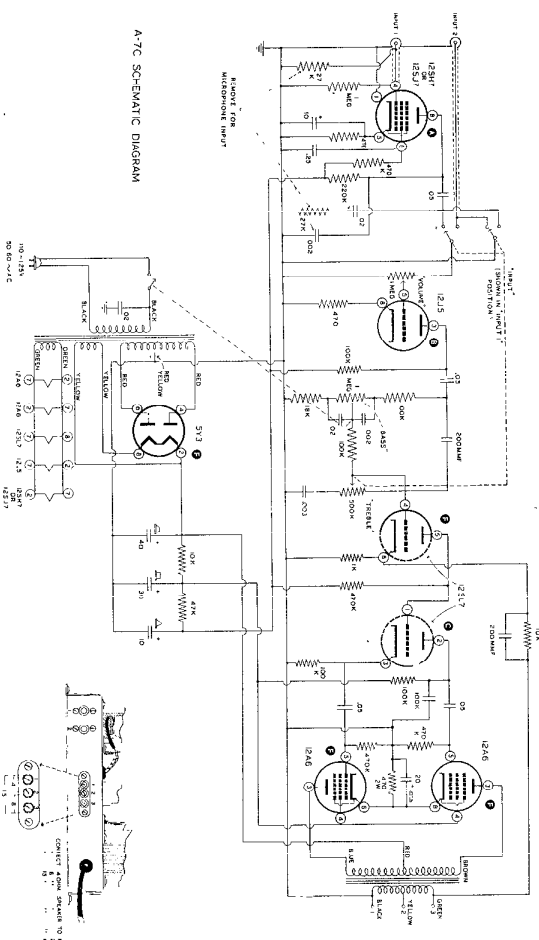
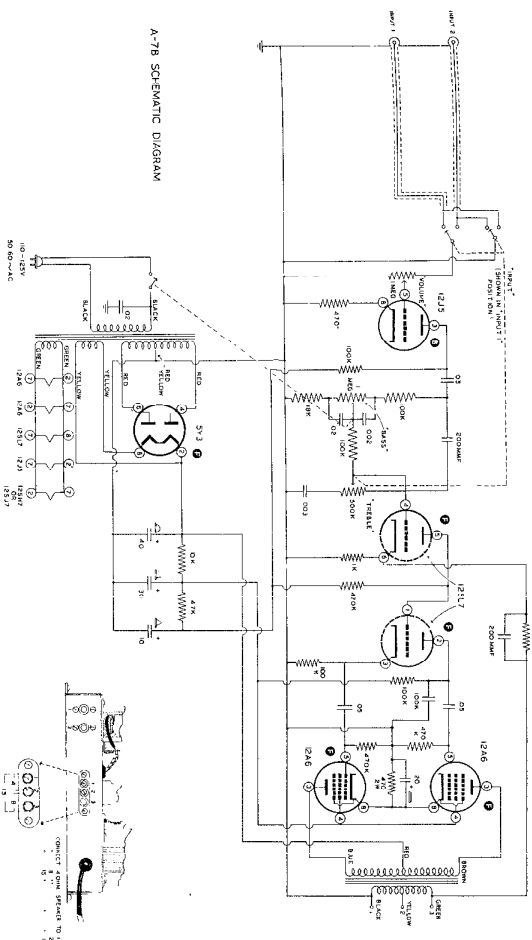
It always has been and it always shall be our sincere desire to produce the best possible kit form test equipment at the lowest possible cost. Furthermore, we are anxious to help the Heathkit user in any way and at all times for we want every Heathkit owner to receive the many years of excellent operation for which his kit was engineered.

HEATHKIT MODEL A-7B and A-7C AUDIO AMPLIFIERS

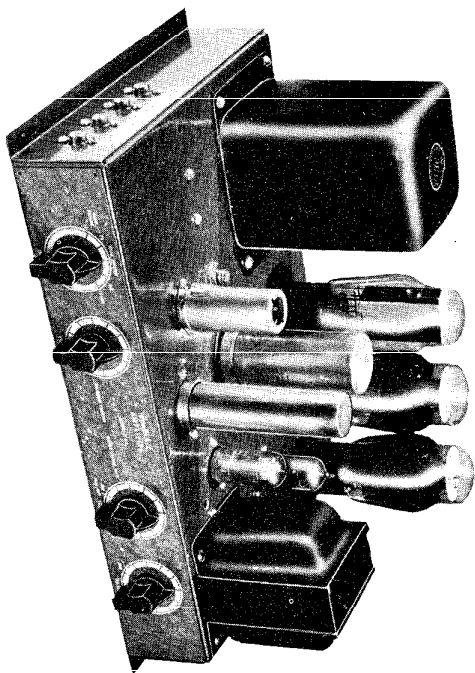


SPECIFICATIONS

Frequency Response.....	+1.5 db 20 to 20,000 cps
Power Output.....	6 watts
Tube Complement.....	1 - 12A5 First Amplifier 1 - 12SL7 Second Amplifier and Phase Splitter 2 - 12A6 Beam Power Output
	1 - 5Y3 Rectifier 1 - 12SH7 or 12SJ7 Preamp (A-7C only)
Output Impedance.....	4, 8, or 15 ohms
Input Voltage.....	110-125 volts AC 50/60 cycles
Physical Specifications.....	11 1/2" wide, 5 1/4" high, 6 1/2" deep
Shipping Weight.....	10 lbs.

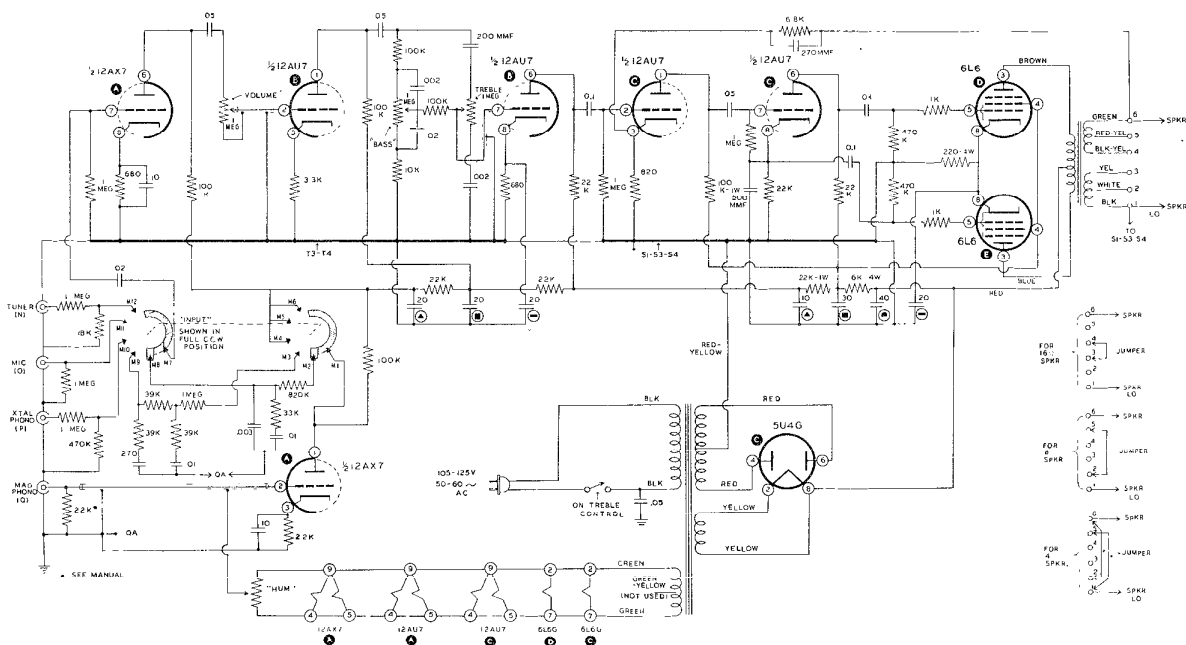


HEATHKIT AUDIO AMPLIFIER MODEL A-9A

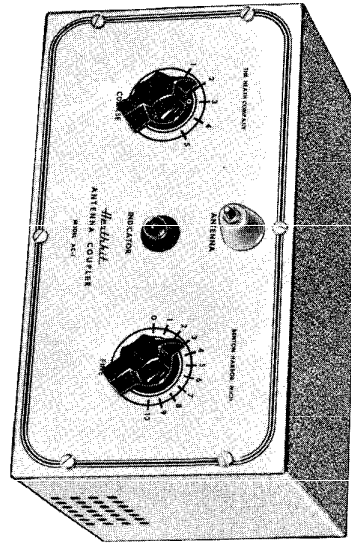


SPECIFICATIONS

Frequency Response.....	+1 db 20 to 20,000 cps
Power Output.....	20 watts
Total Harmonic Distortion.....	1% (at 3 db below rated output)
Input Requirements (for 15 watts output)	
Magnetic Phono Input.....	0.007 volts
Microphone Input.....	0.01 volts
Crystal, Phono Input.....	0.08 volts
Tuner Input.....	0.6 volts
Tone Controls	
Bass (at 30 cps).....	15 db boost, 15 db cut
Treble (at 15 kc).....	15 db boost, 20 db cut
Power Requirements.....	100 watts, 105-125 volts 50/60 cycle AC
Tube Complement.....	12AX7 magnetic phono preamplifier and input amplifier
	12AU7 voltage amplifier and tone control amplifier
	12AV7 voltage amplifier and phase splitter
	Two 6L6G push-pull pentode power amplifiers
	5U4G Rectifier
Dimensions.....	13 1/4" x 8 1/2" x 6 5/8" high
Shipping Weight.....	17 lbs.

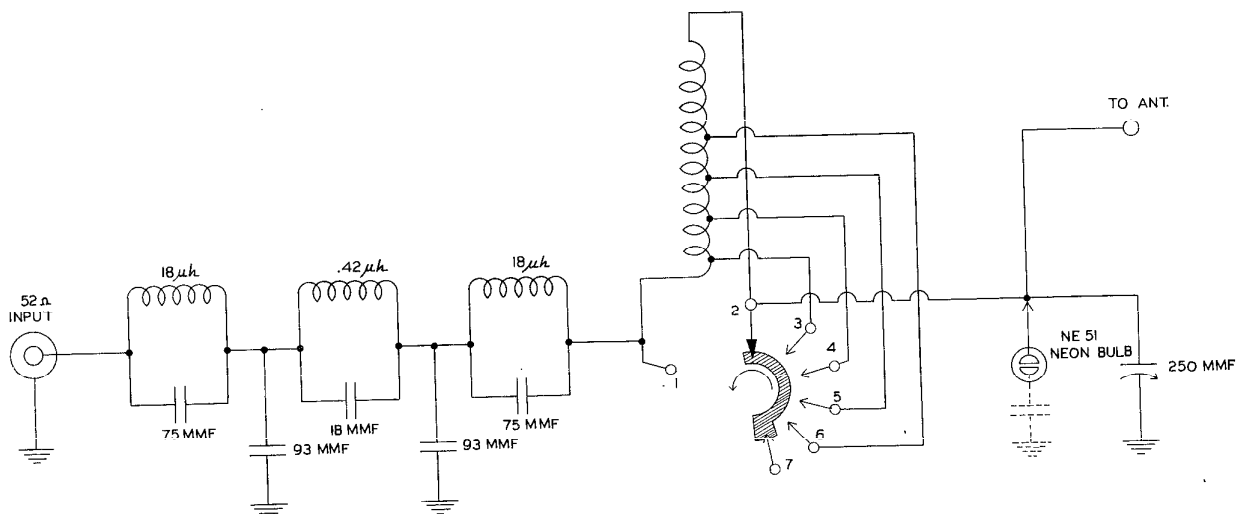


HEATHKIT ANTENNA COUPLER MODEL AC-1



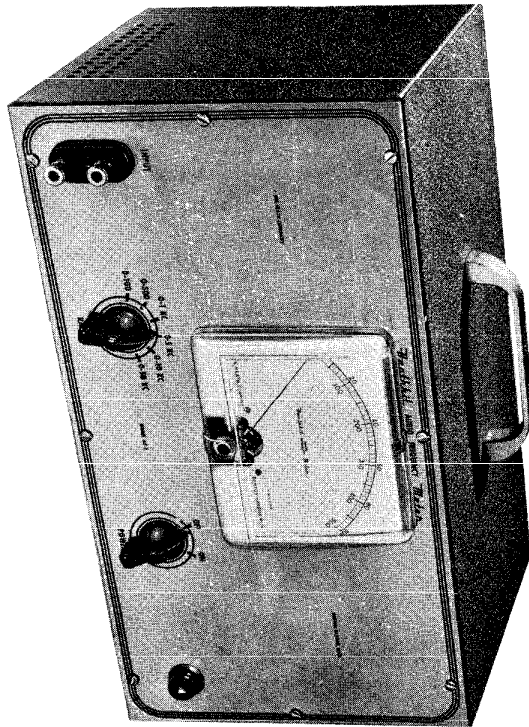
SPECIFICATIONS

Maximum RF Power Input.....	75 watt
Input Connection.....	52 ohm coaxial cable
Output Connection.....	Single-ended
Low Pass Filter Cut-off Frequency.....	36 megacycles
Dimensions.....	7 1/8" x 4 3/8" x 4 7/8"
Net Weight.....	2 lbs.
Shipping Weight.....	3 lbs.



SCHEMATIC ANTENNA COUPLER

HEATHKIT AUDIO FREQUENCY METER MODEL AF-1



TECHNICAL SPECIFICATIONS

Power Requirements:

105-125 V AC 50-60 cycles, 35 Watts

Tube Complement:

1 - 6V6 1 - 6H6 1 - 6X5

1 - 6SJ7 1 - VR150

Ranges:

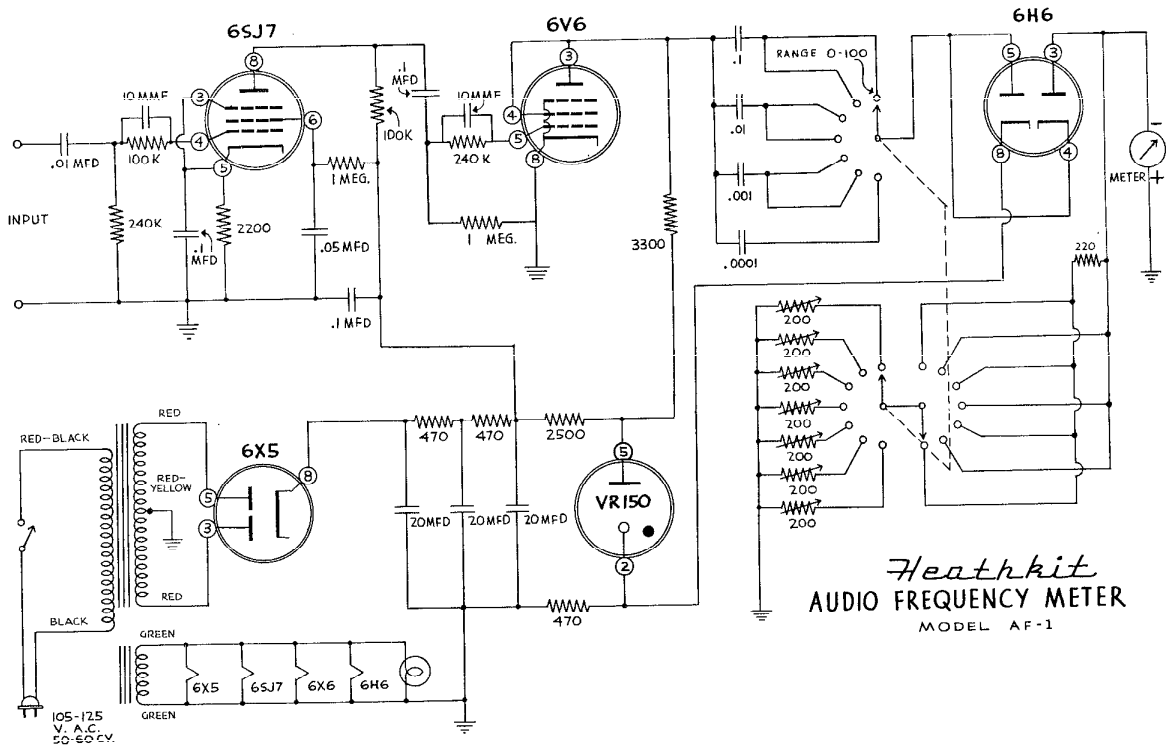
0-100, 0-300, 0-1KC, 0-3KC, 0-10KC, 0-30KC, 0-100KC.

Input:

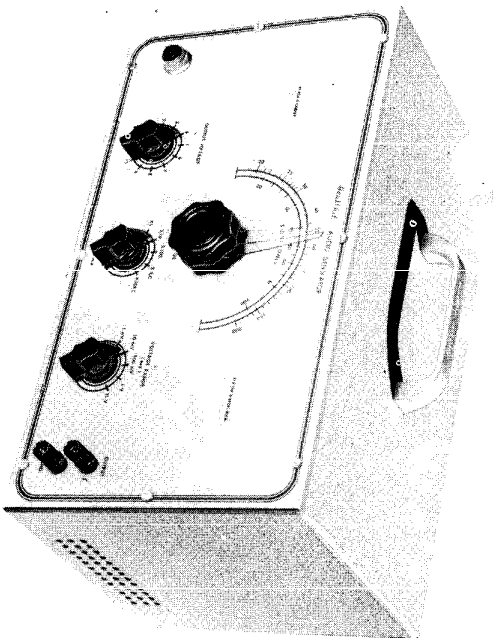
Impedance 250,000 Ohms at 1,000 CPS
Voltage 2-300 Volts RMS

Physical Specifications:

12½" long x 7" high x 7½" deep, Shipping Wt. 12 lbs.

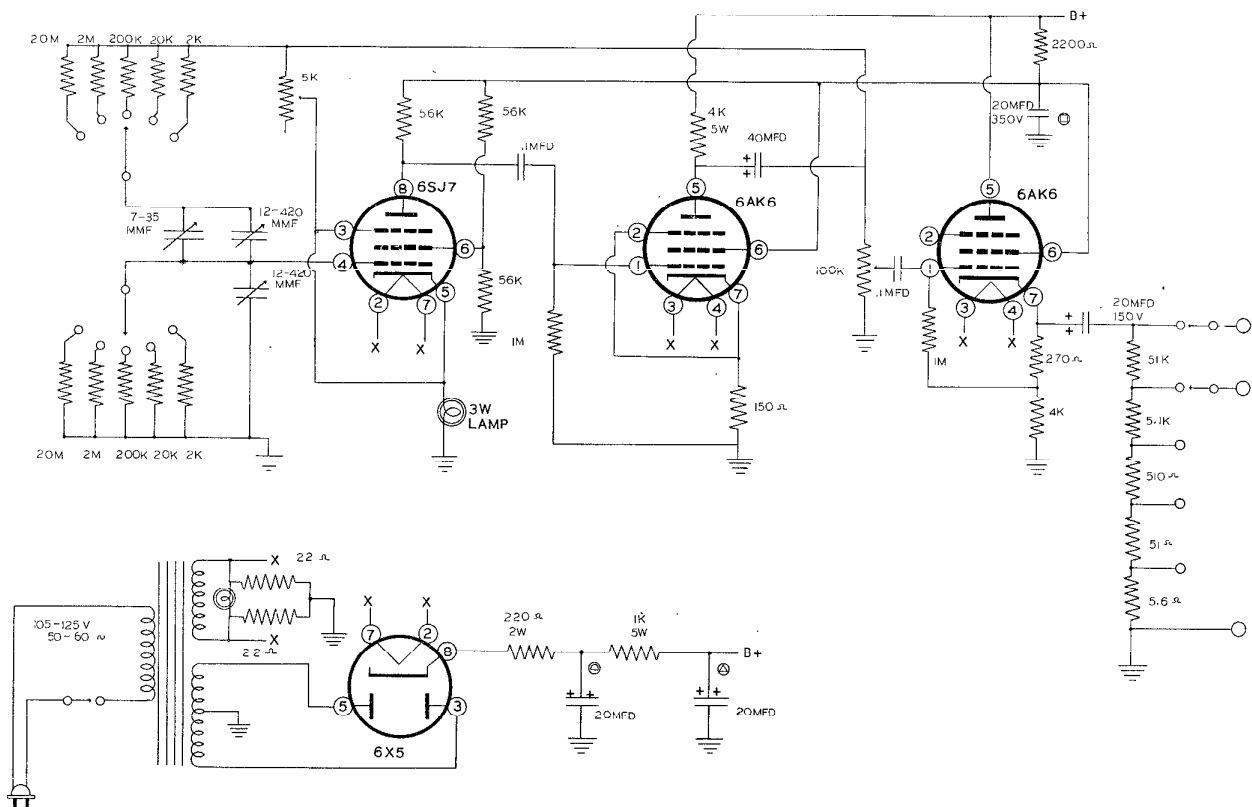


HEATHKIT AUDIO GENERATOR MODEL AG-8

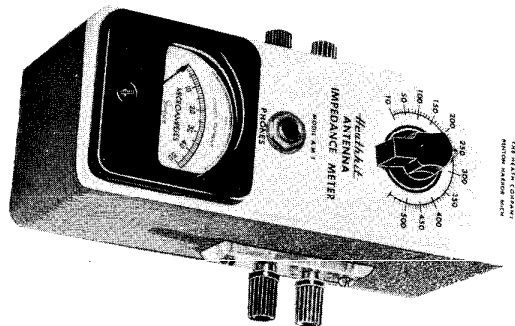


SPECIFICATIONS

Frequency range.....	20 cps to 1 mc in five ranges
Output voltage.....	10 volts (no load) plus or minus 1 db 20 cps to 400 kc; down 3 db at 600 kc; down 8 db at 1 mc.
Generator impedance.....	600 ohms
Distortion.....	less than 0.4%, 100 cps through audible range
Power requirements.....	30 watts, 105-125 volts 50-60 cycles AC
Dimensions.....	7 $\frac{1}{2}$ " high, 13 $\frac{1}{2}$ " wide, 7 $\frac{1}{2}$ " deep
Shipping weight.....	15 lbs.

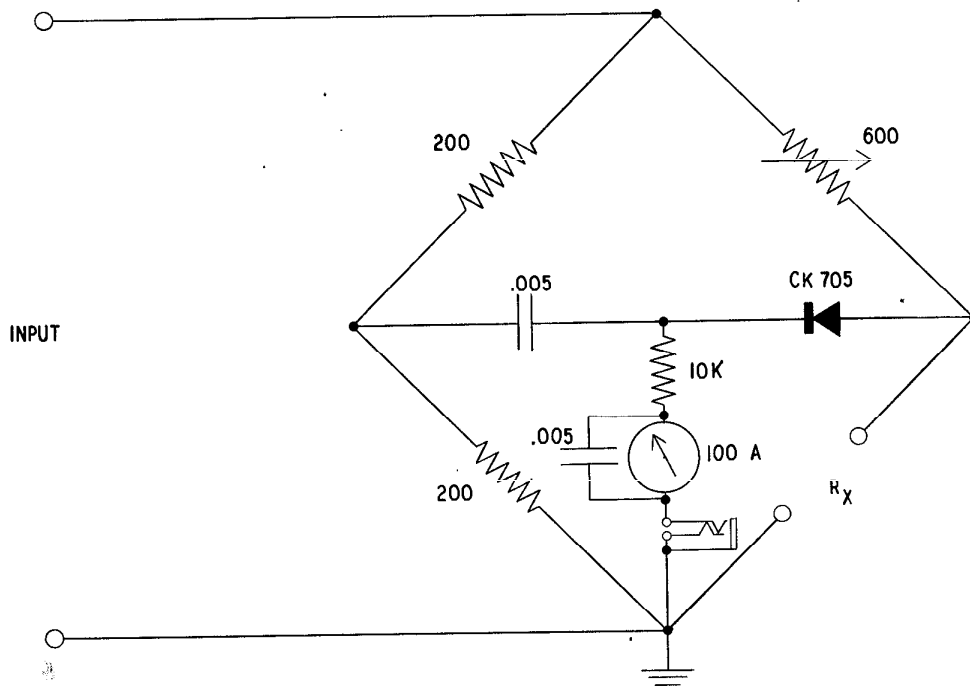


HEATHKIT ANTENNA IMPEDANCE METER MODEL AM-1



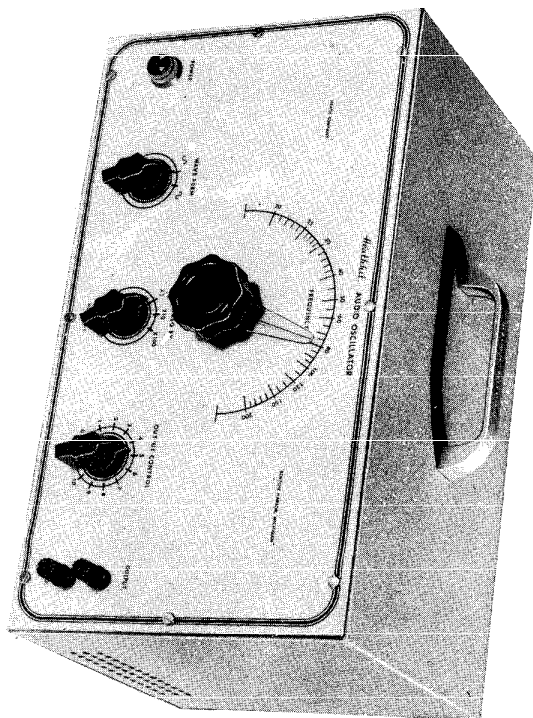
SPECIFICATIONS

Frequency Range.....	0-150 megacycles
Impedance Range.....	0-600 ohms
Null Indicator.....	100 μ ampere meter
Dimensions.....	2 1/2" x 3" x 7"
Net Weight.....	1 lb.
Shipping Weight.....	.3 lbs.



ANTENNA IMPEDANCE METER SCHEMATIC

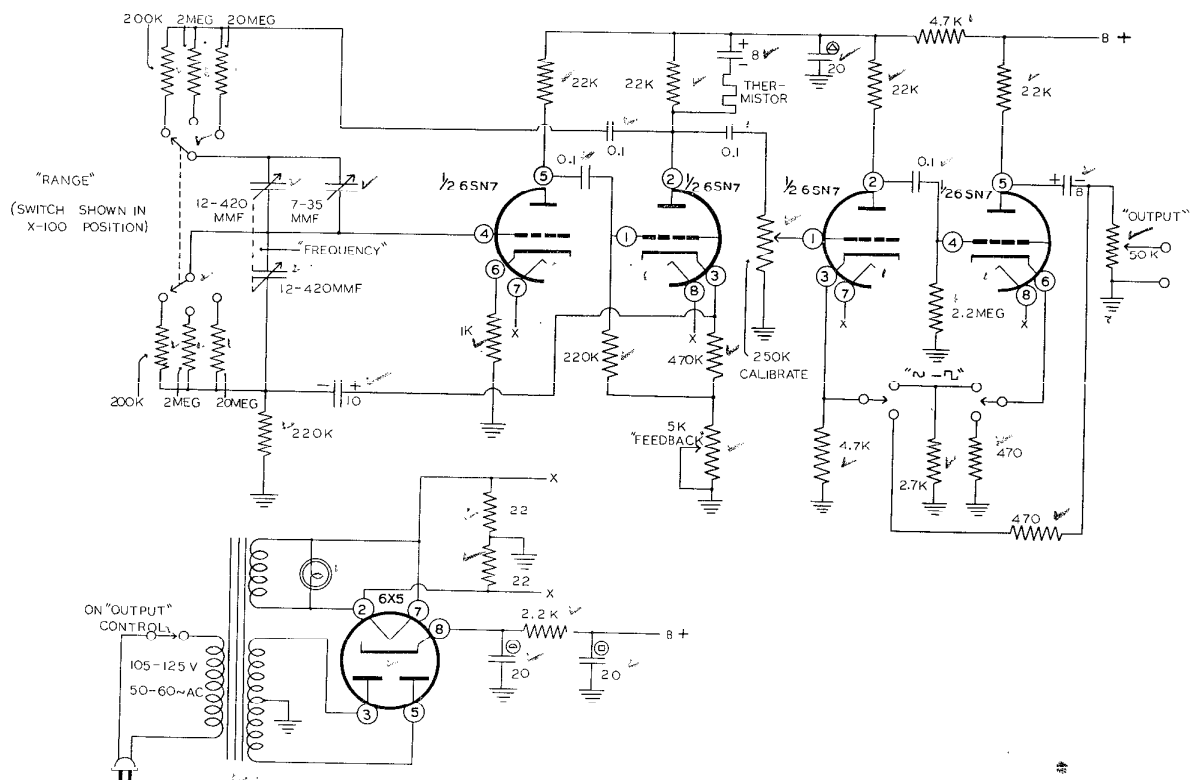
HEATHKIT MODEL AO-1 AUDIO OSCILLATOR



SPECIFICATIONS

Frequency Range
Output Voltage (Sine Wave)
" (Square Wave)
Generator Impedance
Distortion
Power Requirements
Dimensions
Shipping Weight

20 to 20,000 cps, in three ranges
10 volts, no load, plus or minus 1 db.
10 volts, rise time 2 microseconds, (10-90%)
600 ohms
Less than 0.6%, 100 cps through audible range
30 watts, 105-125 volts, 50-60 cycles AC
7 $\frac{1}{2}$ " high, 13 $\frac{1}{4}$ " wide, 7 $\frac{1}{2}$ " deep.
14 lbs.



Frequency Range.....	550 kc to 35 mc on four bands
Tube Complement.....	1 - 12BE6 Oscillator and Mixer 4 - 6A6 AF Amplifier

- 550 kc to 35 mc on four bands
- 1 - 12BE6 Oscillator and Mixer
- 1 - 12BA6 IF Amplifier
- 1 - 12AV6 Second Detector and First Audio

1 - 12A6 Beam Power Output
1 - 12BA6 BFO Tube

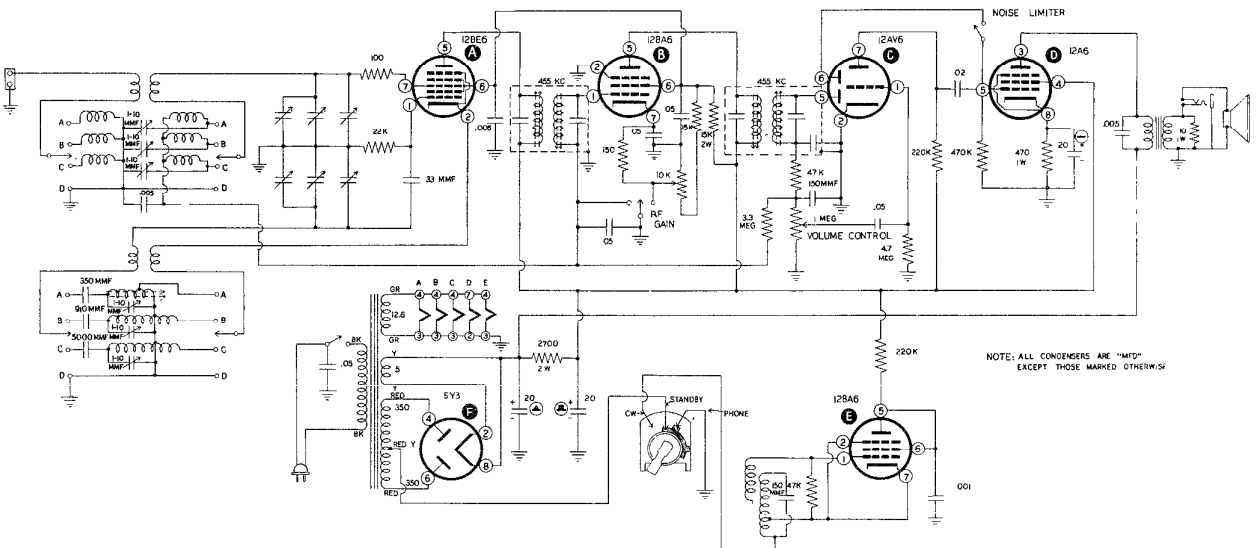
- 1 - 5Y3 Full Wave Rectifier

Power Requirements.....	105-125 volts AC 50/60 cycles 45 watts
Dimensions.....	11 1/2" wide x 5 3/4" high x 6 3/4" deep

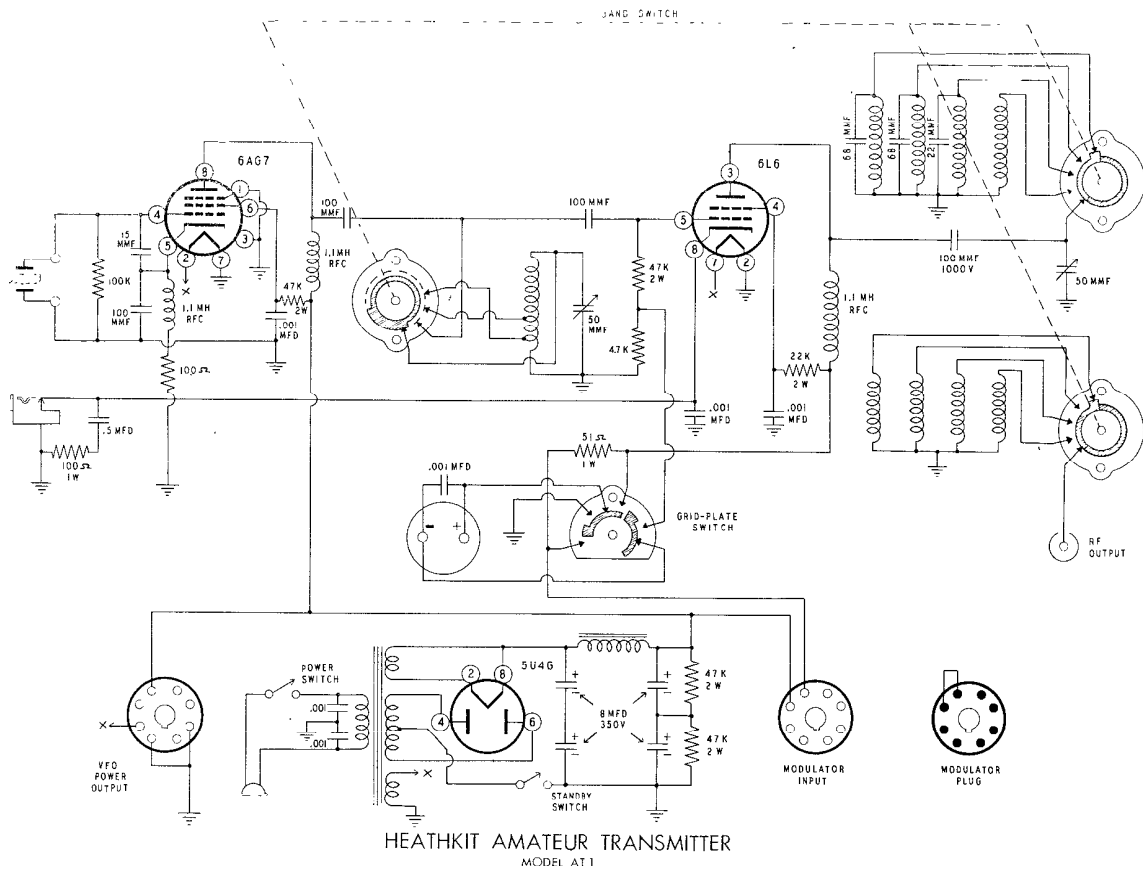
Shipping Weight..... 12 lbs.

Band Spread Tuning
Phone - Standby - CW
Headphone Jack

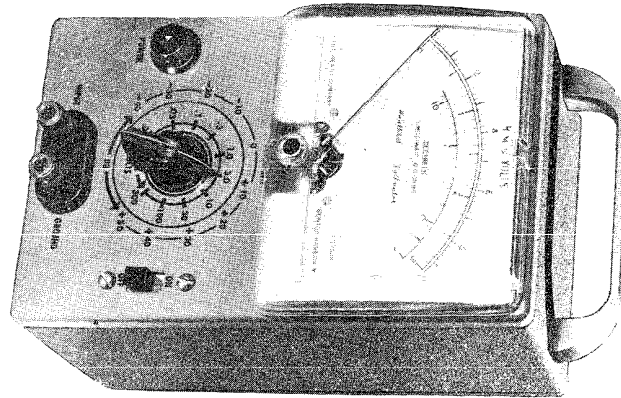
- Noise Limiter
RF Gain Control
Ham Band Identifications



RF Amplifier Power Input	25-30 Watts
Output Connection	52 Ohm Coaxial Cable
Oscillator Operation	Crystal, can be operated by a VFO
Amplifier Operation	CW, can be modulated for phone
Band Coverage	80, 40, 20, 15, 11, 10 Meters
Tube Complement	
504G.....	Rectifier
6AG7.....	Amplifier - Multiplier
6L6.....	Amplifier - Doubler
Power Requirements	105-125 50/60 Cycle, 100 Watts
Cabinet Size	8 1/8" high x 13 1/8" wide x 7" deep
Net Weight	13 lbs.

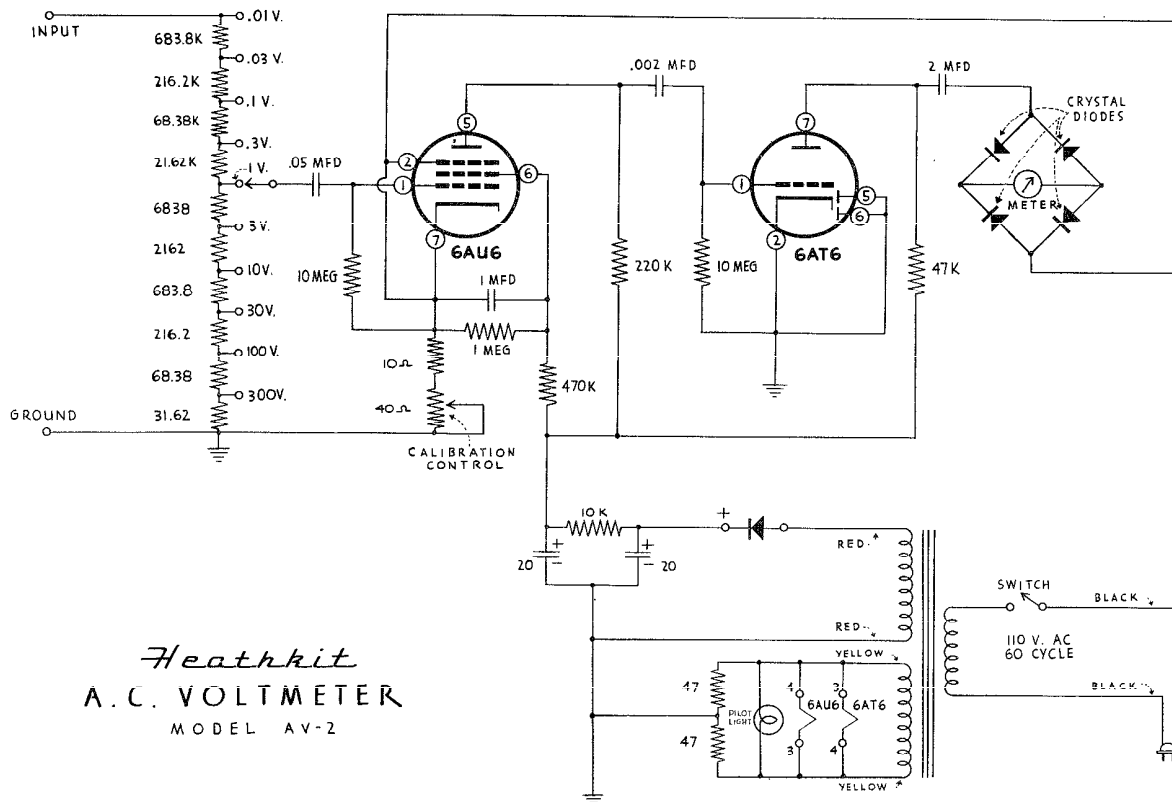


HEATHKIT MODEL AV-2 A. C. VOLTMETER



Technical Specifications

Power Requirement:	105-125V AC, 50-60 cycles, 10 Watts
Tube Complement:	1 - 6AU6 1 - 6AT6
Input Impedance:	1 Megohm at 1 KC
Ranges:	.01, .03, .1, .3, 1, 3, 10, 30, 100, 300 V RMS
Decibels:	Total range -52 to +52 db, scale -12 to +2 db. (1 MW - 600 ohm) ten switch selected ranges from -40 to +50 db.
Physical Specifications:	7-3/8" high x 4-11/16" wide x 4-1/8" deep
Net Weight 3 1/2 lbs.	Shipping Weight 5 lbs.

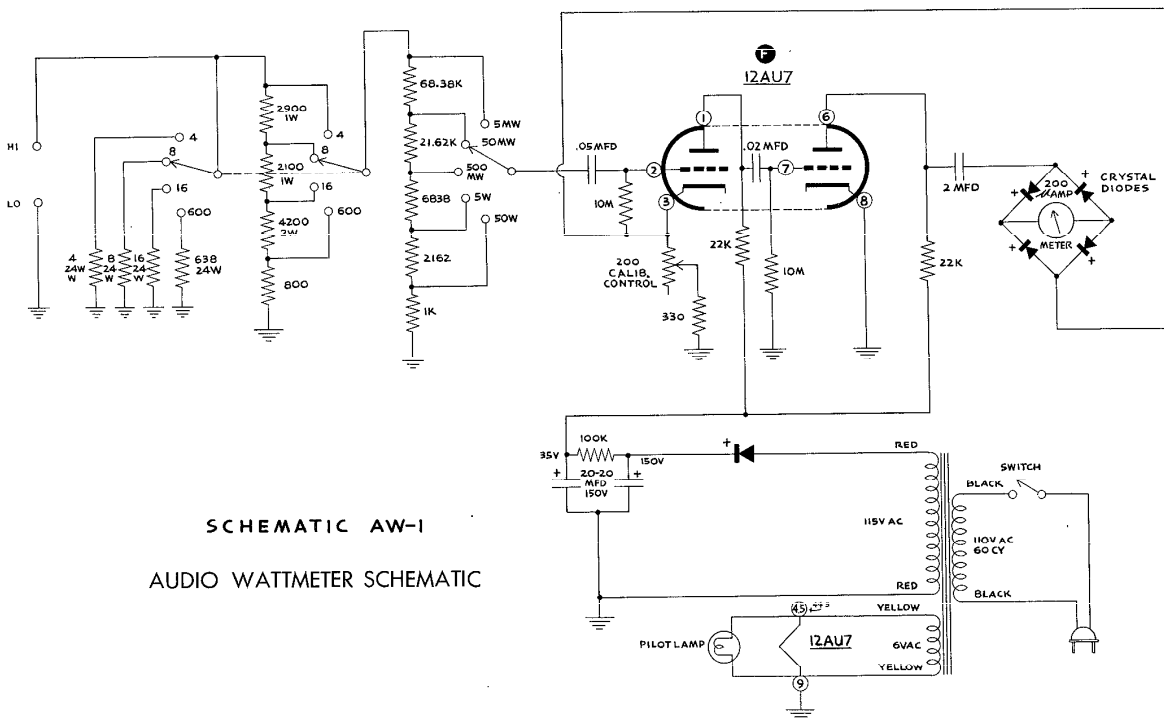


HEATHKIT AUDIO WATTMETER MODEL AW-1



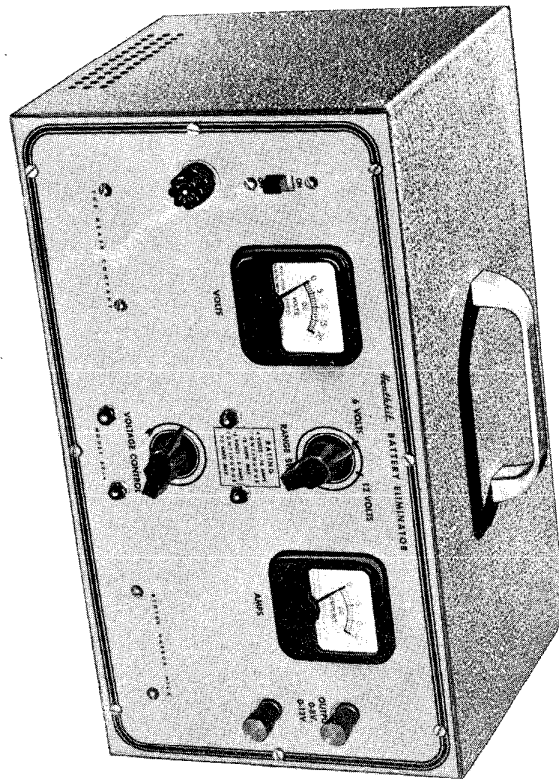
SPECIFICATIONS

Frequency Response.....	±1 db, 10 cycles to 250 kc
Wattage Range.....	0-5 milliwatts, 50 milliwatts, 500 milliwatts, 5 watts, 50 watts full scale.
DB Ranges.....	Total range, -15 db to +48 db, scale -5 to +18 db (1 mw - 600 Ω). Five switch selected ranges from -10 db to +30 db.
Load Resistors.....	4 Ω, 8Ω, 16 Ω and 600 Ω non-inductive, switch selected.
Audio Input Power Ratings.....	Up to 25 watts maximum continuous duty, 50 watts maximum intermittent. Duty cycle 50 watts is 3 minutes. Ventilated cabinet allows efficient cooling.
Multipliers.....	Precision type
Meter.....	4 1/2" streamlined case with 200 microampere movement.
Meter Rectifier.....	Crystal diode bridge for wide range frequency response.
Tube.....	12AU7 - voltage amplifier and current amplifier for meter.
Power Supply.....	Power transformer and selenium rectifier
Power Requirements.....	105-125 volt AC, 50/60 cycle, 6 watts
Dimensions.....	7 3/8" high x 4 11/16" wide x 4 1/8" deep
Net Weight.....	3 lbs.
Shipping Weight.....	6 lbs.



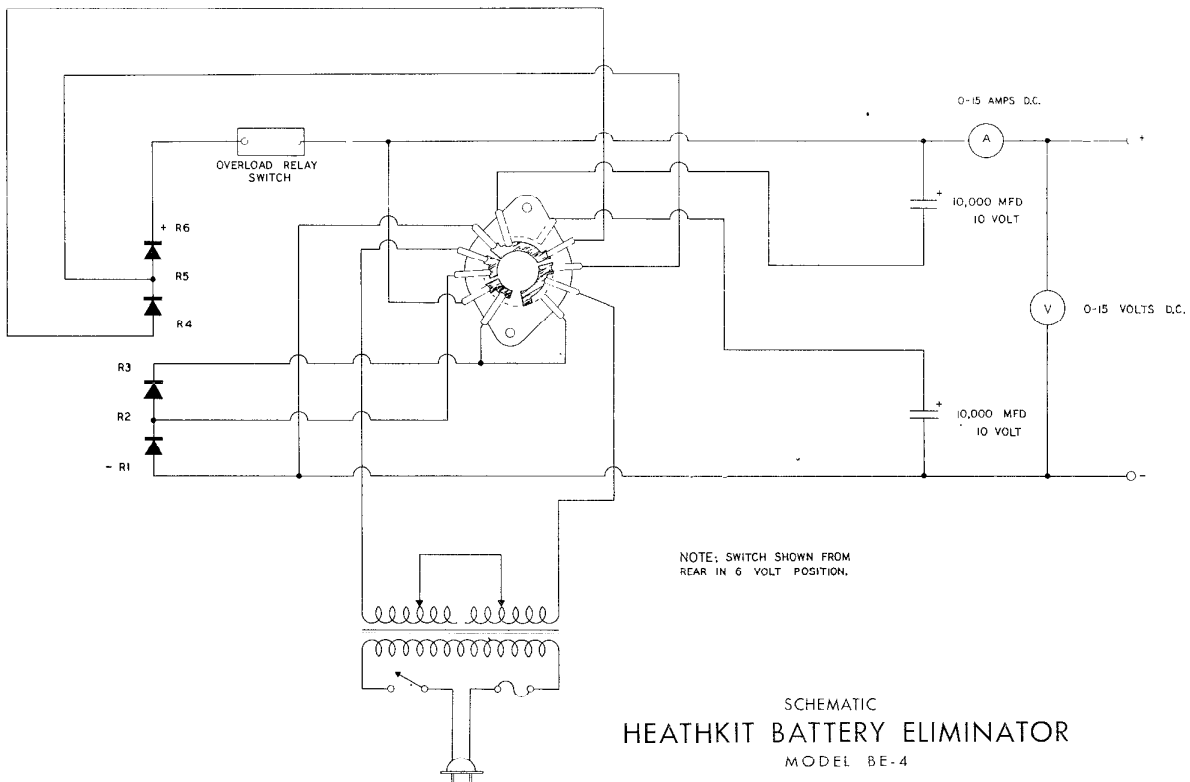
SCHEMATIC AW-1
AUDIO WATTMETER SCHEMATIC

HEATHKIT BATTERY ELIMINATOR MODEL BE-4



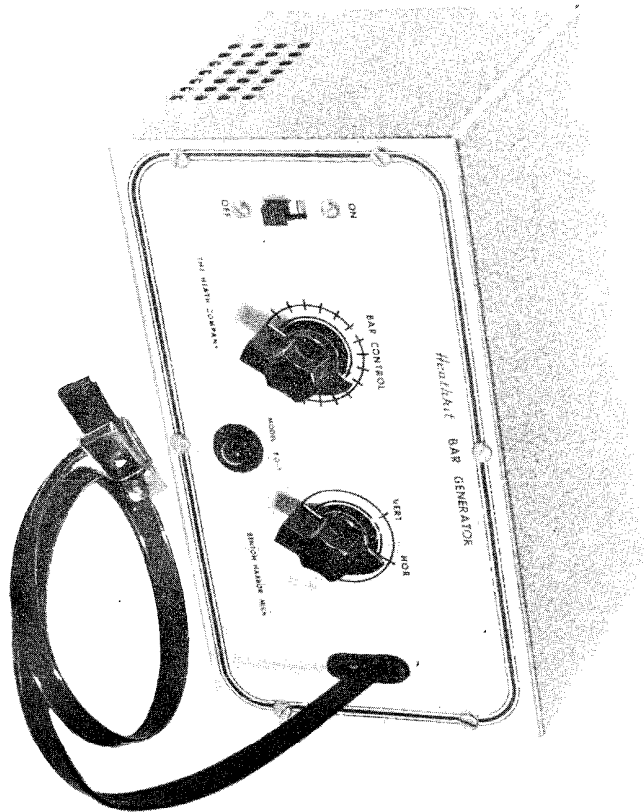
SPECIFICATIONS

Continuously variable voltage output	
0-8 volts DC.....	10 amperes continuously
0-16 volts DC.....	15 amperes maximum intermittent
	5 amperes continuously
Power Requirements.....	7.5 amperes maximum intermittent
Dimensions.....	105-125 V., 50-60 cycles AC at 175 watts
Approximate shipping weight.....	13 1/4" wide x 7 1/2" deep x 7 1/4" high
	22 lbs.



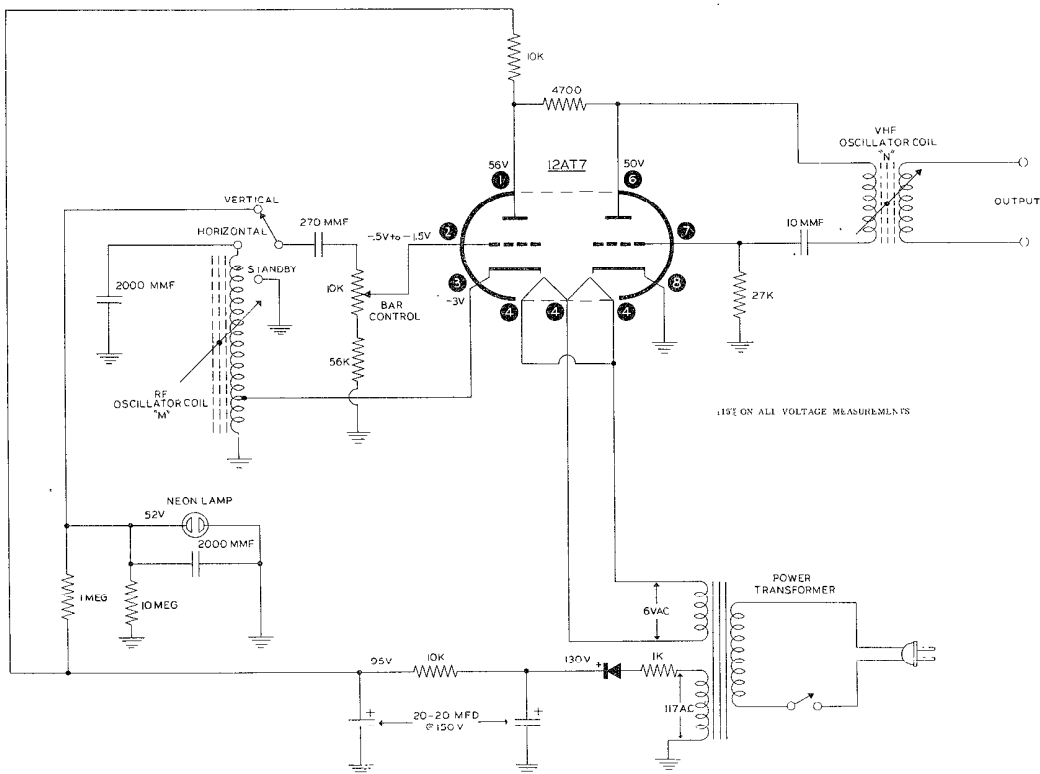
SCHEMATIC
HEATHKIT BATTERY ELIMINATOR
MODEL BE-4

HEATHKIT BAR GENERATOR MODEL BG-1



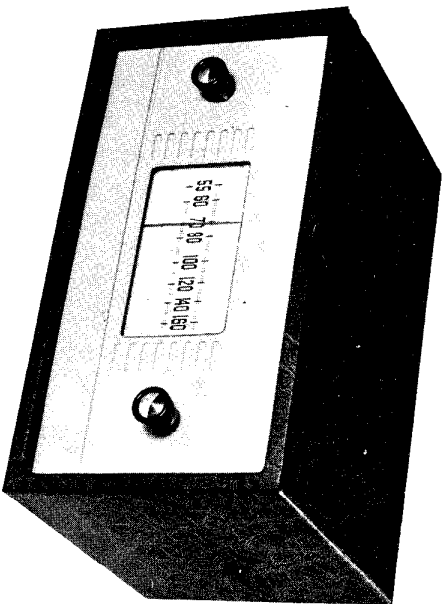
SPECIFICATIONS

Carrier Frequency.....	60 to 80 megacycles
Modulating Frequencies.....	113 to 172 KC
Radio Frequency (Horizontal Linearity).....	480 cps. (Approx.)
Low Frequency (Vertical Linearity).....	100,000 microvolts
Output Voltage.....	12AT7
Tube.....	Transformer operated half-wave selenium rectifier
Power Supply.....	105-125 volts, 50-60 cycles AC
Dimensions.....	8 1/8" wide, 4 3/8" high, 4 7/8" deep
Shipping Weight.....	6 lbs.



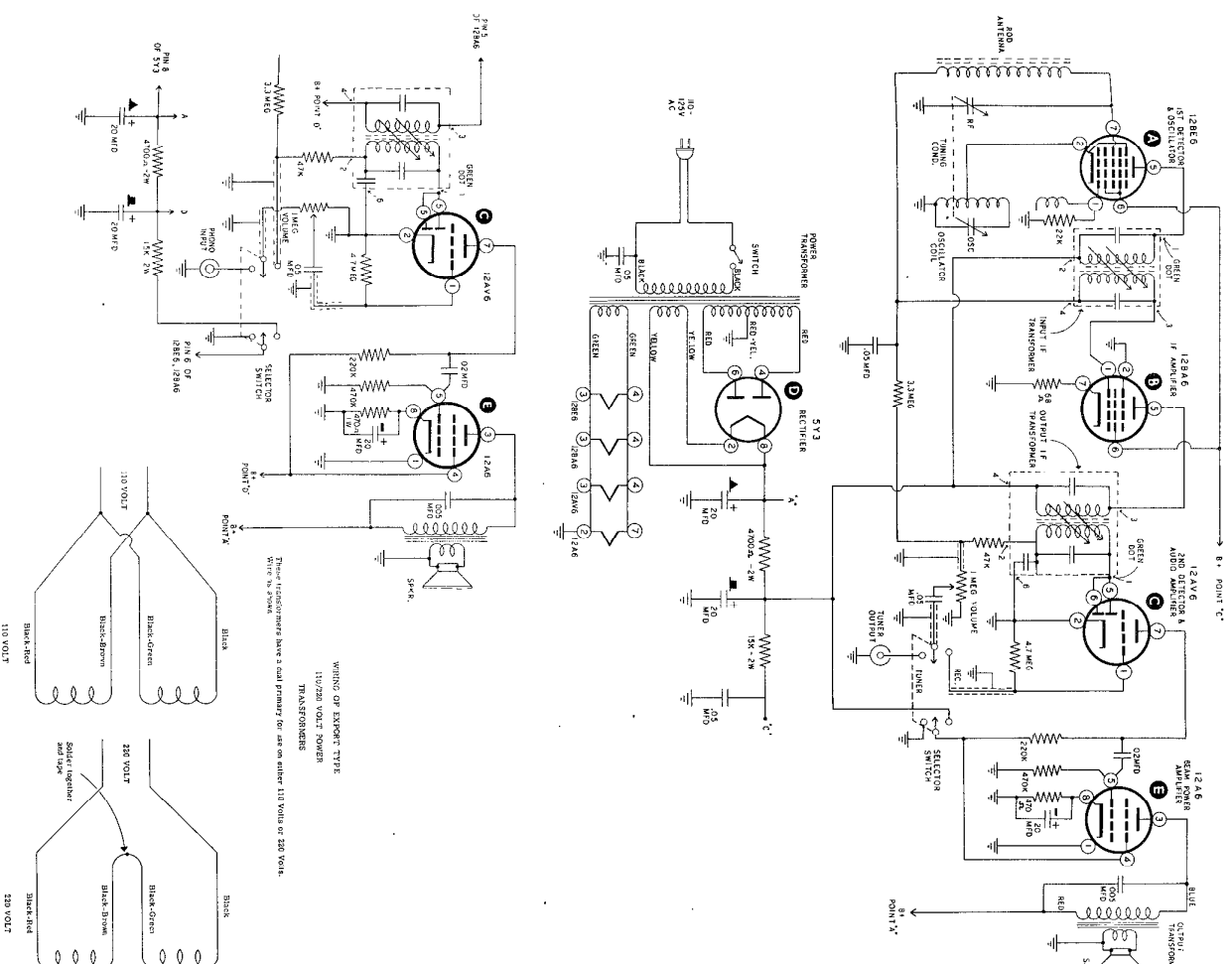
HEATHKIT BROADCAST BAND RECEIVER

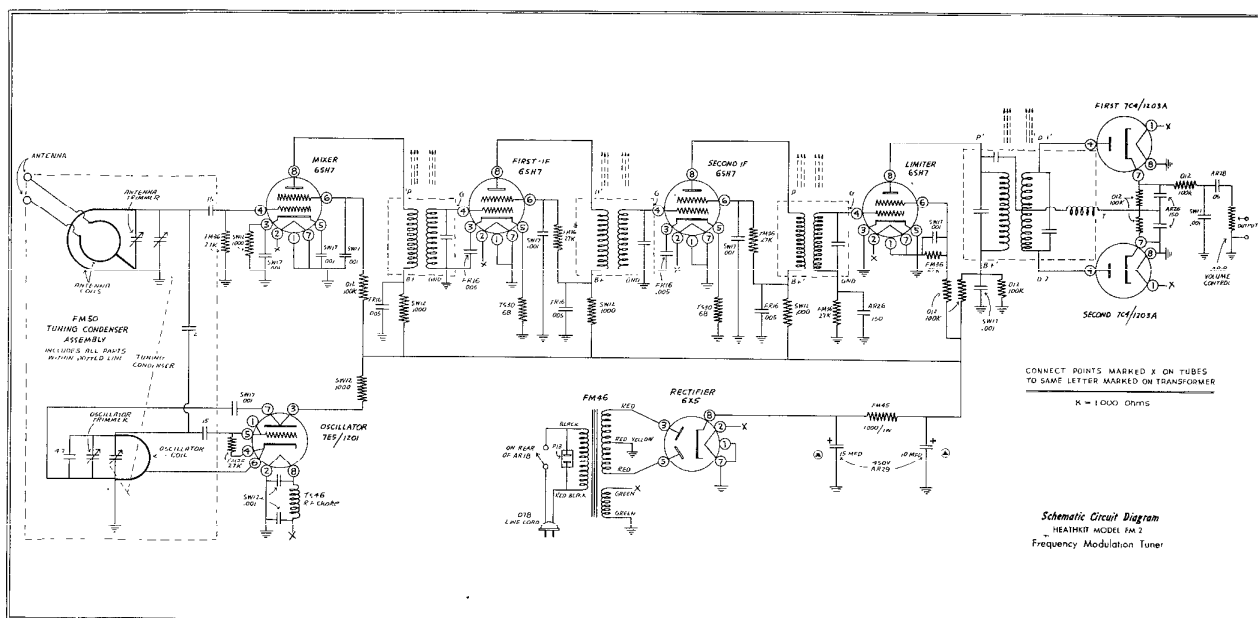
MODEL BR-2



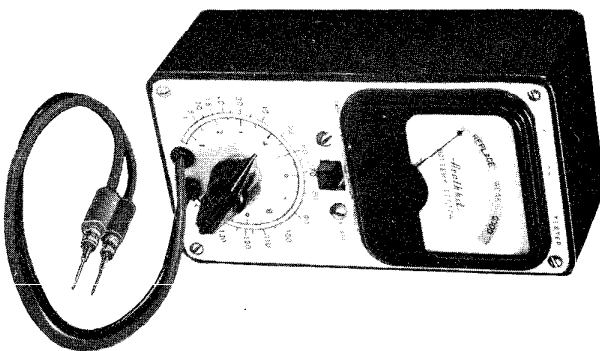
SPECIFICATIONS

Radio	
Tuning Range.....	550 kc to 1620 kc
I. F. Frequency.....	455 kc
Antenna.....	Built-in High Sensitivity Rod Type
Speaker (included).....	5 1/2" PM 4 ohm Voice Coil
Tuner Operation.....	High impedance to any amplifier input with resistance of 100,000 ohms or more. 110 V outlet provided for amplifier, phono player, etc.
Phonograph	
Input.....	1 megohm high impedance for optimum performance with any good quality crystal or ceramic phono pickup.
Tube Complement.....	1 - 5Y3 Rectifier 1 - 12A6 Beam Power Amplifier 1 - 12AV6 Detector, A.V.C. and Audio Amplifier 1 - 12BA6 I. F. Amplifier 1 - 12BE6 Pentagrid Converter 105-125 V 50-60 cycles AC 40 watts 11 1/2" wide, 5 3/4" high, 6 3/4" deep
Power Requirements.....	
Dimensions.....	





HEATHKIT MODEL BT-1 BATTERY TESTER



SPECIFICATIONS

HEATHKIT BATTERY TESTER MODEL BT-1

Test Ranges

0 to 15 volts
0 to 180 volts

Load Current

"A-Batt" Range 100 MA.
"B-Batt" Range 10 MA.

Meter Indications

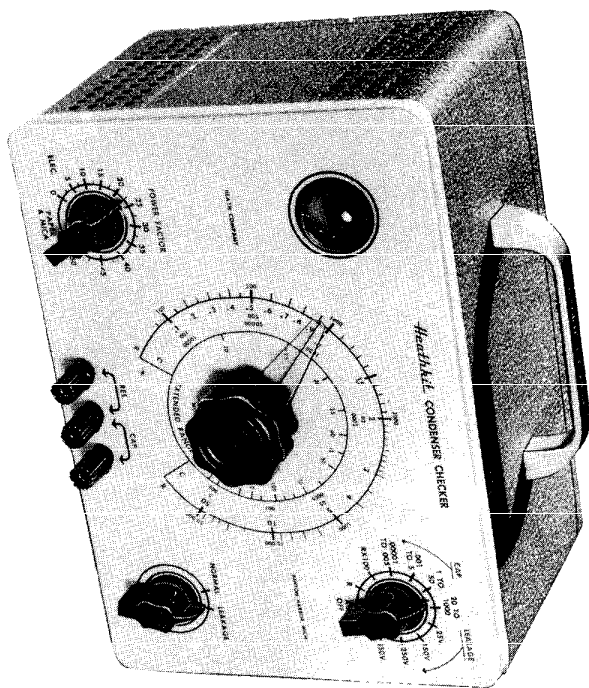
GOOD-WEAK-REPLACE

Length 5 7/8", Width 3", Height 2 3/4"

Shipping Weight

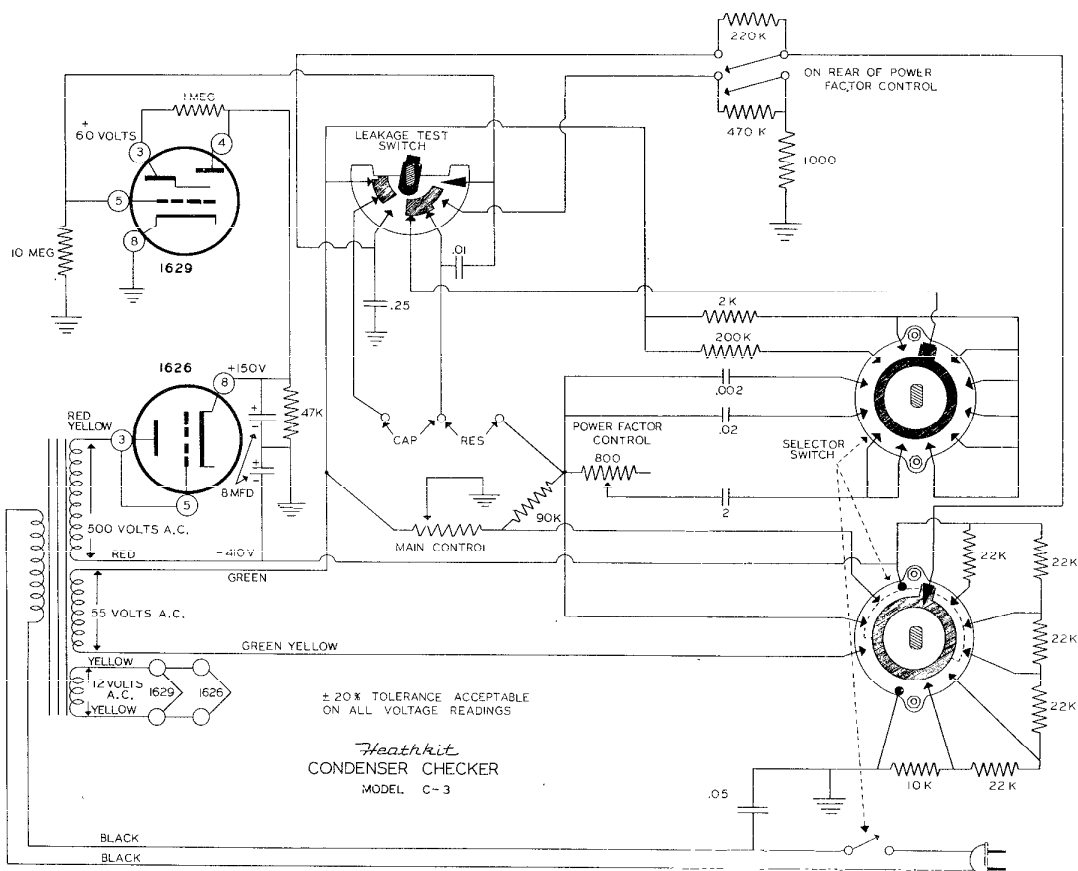
3 Pounds

HEATHKIT CONDENSER CHECKER MODEL C-3

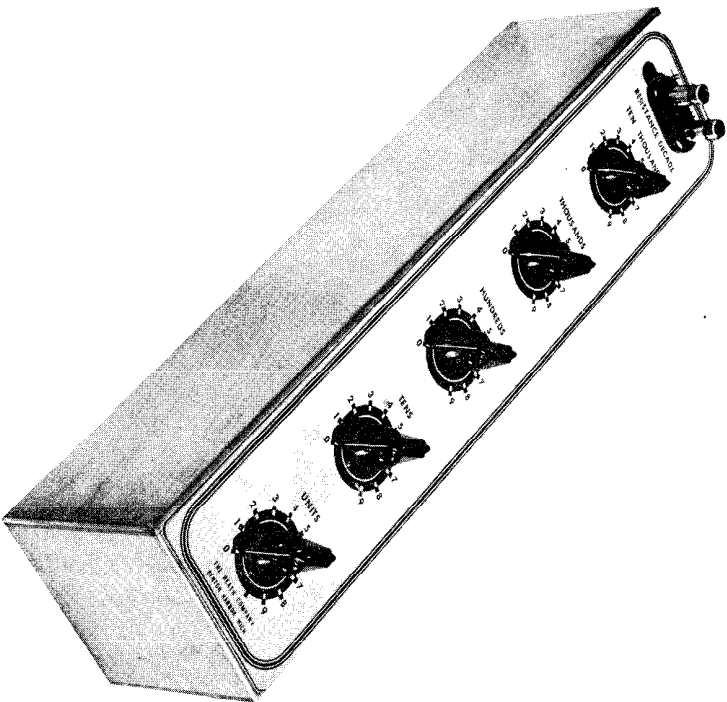


SPECIFICATIONS

Power Requirements:	110-125 volts, 50-60 cycles a-c
Cabinet Size:	9 $\frac{1}{2}$ " wide x 6 $\frac{1}{2}$ " high x 5" deep
Kit Shipping Weight:	7 pounds
Power Supply:	Power transformer—half wave rectifier
Capacity: 4 Ranges:00001 mfd - .005 mfd .1 mfd - .5 mfd 20 mfd - 1000 mfd
D-C Leakage Test	
Polarizing Voltages: 5 Ranges:	25 volts d-c 130 volts d-c 250 volts d-c 350 volts d-c 450 volts d-c
Resistance Ranges: 2 Ranges:	100 ohms to 50,000 ohms 10,000 ohms to 5 megohms
Circuit:	A-c powered bridge for both capacitive and resistive measurements. Maximum opening of electron beam indicator denotes bridge balance.



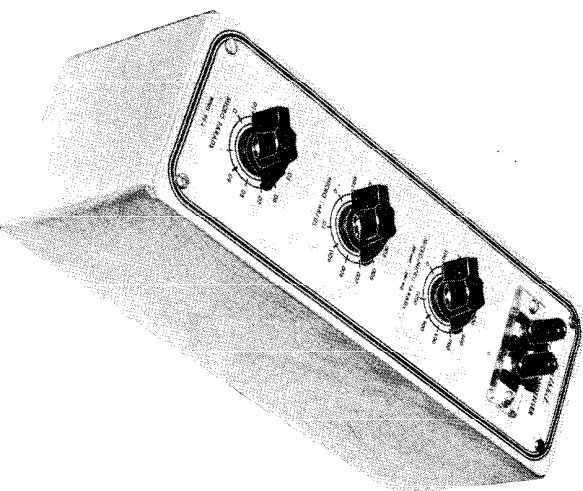
HEATHKIT MODEL DR-1 DECADE RESISTANCE KIT



SPECIFICATIONS

Range.....	1 Ω to 99,999 Ω in one ohm steps
Components.....	Resistors: Precision - 1/2% accuracy Switches: Ceramic
Maximum Current.....	Units-----500 mA Tens-----150 mA Hundreds-----50 mA Thousands-----15 mA Ten Thousands-----5 mA
Dimensions.....	14 1/2" x 3 3/8" x 3 3/8" Birch Cabinet

HEATHKIT MODEL DC-1 DECADE CONDENSER



SPECIFICATIONS

Range.....	100 mmf. to 0.111 mfd. in increments of 100 mmf.
Voltage Rating.....	350 volts DC, continuous; 500 volts DC, intermittent; 1000 volts DC test.
Dielectric.....	Silver mica
Accuracy of Incremental Capacity.....	Plus or minus 1%
Zero capacitance.....	15 to 20 mmf. with all switches set at zero
Dimensions.....	3 3/4" wide, 4 3/4" high, 10 5/8" deep
Shipping Weight.....	4 lbs.